

Department of Energy's Long-Term Stewardship Strategic Plan

Note to Reader

Thank you for reviewing this second draft of the Department of Energy's Long-Term Stewardship Strategic Plan. This plan was revised in consideration of comments provided by over 37 sources on the December 7, 2001 draft plan. A comment resolution table is available upon request.

This draft differs from the December 7, 2001 draft plan in several ways.

- The performance measures under each goal are reduced in number and more focused on currently measured activities or activities that will be measurable in the near future.
- The "Comments" sections have been removed. The issues raised in each of the comment sections were generally incorporated into the second draft or presented to senior DOE management for resolution. In addition, the introduction of the second draft contains further discussion of the issues and how they are to be resolved generally.
- Essentially the thrust of the three major goals remains the same. In many cases, duplicative objectives and strategies were combined under one or more of the three goals to clarify and simplify the plan.
- In addition, this draft plan increases the emphasis (by the creation of a stand-alone objective from at least three varying objectives and strategies) on the Department's responsibilities as land manager as it relates to the Department's responsibility for maintaining and monitoring environmental remedies in coordination with other federal, state, local, or tribal government entities.
- New objective 1.2, "Minimize the Department of Energy Environmental Liability for Long-Term Stewardship Consistent with Laws and Regulations," captures the stewardship minimization concept through (a) limiting the potential influx of additional sites requiring DOE to maintain long-term stewardship from federal (including DOE programs) or private entities; (b) working with appropriate other federal, state, and local government entities to develop land management and/or remedy maintenance and monitoring options; and (c) identifying alternative funding mechanisms and other potential liability-reducing strategies.

- The discussion of the current context for long-term stewardship has been increased to include, for example, a brief discussion of the various legal and regulatory frameworks and related issues and the Department's potential future scope of long-term stewardship responsibilities (including the potential changes in the Department's long-term stewardship responsibilities due to mandatory or discretionary transfers of sites into federal ownership or between federal owners).
- The potential performance measures are now presented in Appendix A of the draft plan as "Implementation Actions for the Department of Energy Long-Term Stewardship Strategic Plan." These action items will form the basis for, and be integrated into, a follow on implementation plan.
- Appendix B of the draft plan is added to reference many of the key reports, studies, or other material that serve as the foundation for the Department's long-term stewardship effort.

The second draft of the plan continues to focus on a five-year implementation time frame to ensure that current long-term stewardship obligations continue to be met and that the creation of future liabilities is minimized. The emphasis on near-term activities, such as integrating long-term stewardship into existing Departmental systems and processes, will enable the Department us to address those longer-term issues effectively. Because this will be a Department-wide plan, we recognize the need to eventually identify roles and responsibilities. Upon completion of the plan (i.e., after all Departmental elements have agreed to the strategies contained in this plan), the Department as a whole will need to develop an implementation strategy as a companion or other follow-on document.

Finally, considering the interest and the number of comments provided on the first draft, we anticipate a large volume of comments on this draft. Therefore, please provide comments with the following considerations:

- Electronic versions of comments are preferred. If this is not possible, please provide comments via fax to ensure timely receipt.

- Please identify the issue or concern; cite to the goal, objective, or strategy of concern; and then provide suggested or alternative language to address the concern.
- Finally, please recognize that “strategic planning” generally, and particularly within the long-term stewardship context, is an iterative process. Therefore, we anticipate that, even when “finalized” the plan will be revisited over time, and it will be changed to accommodate new developments in, or knowledge about, long-term stewardship. For now, this draft plan identifies many near-term (and some longer-term) activities that will be necessary to undertake to ensure success.

Please forward all comments to:

Mr. Gregory Sullivan, EM-51
U.S. Department of Energy
1000 Independence Avenue SW
Washington, DC 20585
Tel 202-586-0771, Fax 202-586-1241
Greg.Sullivan@em.doe.gov

This draft (Version 2.0) will be circulated within the Department (Field Offices are encouraged to provide it to their local site-specific advisory boards for review and comment) and to interested national intergovernmental and stakeholder groups for comment. Comments on this version are due by C.O.B. September 6, 2002. We intend to incorporate/resolve the comments on this version and to release the “final” draft of the plan by October 2002.

Thank you again, in advance for your time, attention and comments on this draft. Please do not hesitate to contact me on (202) 586-9280, if you have any questions.

Dave Geiser
Director, Office of Long-Term
Stewardship

Message from the Secretary of Energy (proposed)

The Department of Energy continues to be a leader in meeting this country's needs in the areas of energy, national security, science, and environmental protection. Our accomplishments in ensuring our national defense and in providing more, and better, energy alternatives are undeniable.

The Department also continues to make progress in addressing the challenges of reducing the environmental consequences of our actions and expediting the cleanup of our sites. The accelerated cleanup effort clarifies the need for a comprehensive Department-wide approach to ensuring that our investment in hundreds of sites across the country remains viable and that the environmental remedies put in place remain protective of current and future generations.

Through this long-term stewardship strategic planning process, we are able to focus the enormous scientific and technical capacity of the Department on achieving the goal of sustained environmental protection. The issues addressed in this plan relate not only to the challenges facing the Department, but also to the challenges facing other governmental and private entities engaged in cleanup and reuse of environmentally impacted properties.

Although the goals contained in this plan cut across programs, core competencies, and technical disciplines, I am confident the Department, in coordination with our federal, state, local and tribal government partners and stakeholders, can achieve them. To this end we will continue to work with these interested entities to develop new, innovative, and workable assurances to long-term environmental protectiveness.

This plan is the initial step in an ongoing and iterative effort to define and integrate long-term stewardship into the business activities of the Department of Energy. The plan helps to shape the development of the fiscal year 2004 budget and will be integrated into future Departmental budgets.

The goals, strategies, and performance measures presented in this plan enable us to better understand the indicators of progress toward our vision of providing continuing leadership in addressing some of this country's

most important environmental and long-term stewardship needs. I look forward to working with you to realize the goals and objectives of this long-term stewardship strategic plan.

Spencer Abraham
Secretary of Energy

Executive Summary (to follow)

Table of Contents

Message from the Secretary of Energy (proposed)	iv
Executive Summary (to follow).....	vi
Part I. Background and Structure.....	1
<i>Understanding the Structure of this Plan</i>	1
<i>Seven Draft Principles Used to Develop This Plan</i>	1
Part II. Situational Analysis	4
<i>Setting the Stage: Current Context</i>	4
<i>A Strategy for Coordinating Long-Term Stewardship Activities to Ensure Timely and Cost-Effective Cleanup</i>	6
<i>The Potential Impact of Changing Factors</i>	13
Part III. Mission, Vision, and Goals	15
<i>Goal I. Post-Remediation Responsibility and Liability Are Effectively Managed</i>	10
<i>Goal II. Long-Term Stewardship Responsibilities Are Understood and Built into the Way the Department Does Business</i>	12
<i>Goal III. The Capability and Tools Are in Place to Ensure the Effectiveness of Long-Term Stewardship for Current and Future Generations</i>	14
Appendix A. Implementation Actions for the Department of Energy's Long-Term Stewardship Strategic Plan	16
Appendix B. Long-Term Stewardship References	23

Part I. Background and Structure

Understanding the Structure of this Plan

This Department of Energy's Long-Term Stewardship Strategic Plan is designed to be similar in structure to, and consistent with, the Department of Energy's Strategic Plan, which is based on the requirements and definitions in the Government Performance and Results Act (Public Law 103-62). This Long-Term Stewardship Strategic Plan supports the core values, vision, and objectives of the Department's mission and should be considered a lower-level component of the Department's overall strategic plan. Ultimately, the elements of the Long-Term Stewardship Strategic Plan should be incorporated into all relevant Departmental management initiatives and strategic planning.

The three general goals identified in the Long-Term Stewardship Strategic Plan are outcome oriented and are presented in a manner that allows for assessment of progress in the future. Performance measures specify the basis by which the Department will ascertain its progress toward achieving these goals. Objectives define the major accomplishments that contribute to achieving each general goal.

The objectives are measurable, achievable, and have reasonable targets with deadlines. Finally, each objective has a set of strategies, which are the activities that will lead to its accomplishment.

Seven Draft Principles Used to Develop This Plan

The Long-Term Stewardship Executive Steering Committee (representatives from Field Office and Headquarters Program Secretarial Offices) played a key role in the development of this plan and in the implementation of the Department's long-term stewardship effort. The Executive Steering Committee has developed draft long-term stewardship principles to guide the development and implementation of this plan. The draft principles, to be finalized as this strategic plan is finalized, are as follows:

1. Long-term stewardship is a Department-wide responsibility.

As a whole, the Department is committed to the protection of human health and the environment in all of its actions. To ensure success, all Departmental elements must

consider long-term stewardship as an integral part of the Department's mission.

2. Long-term stewardship is a component of all aspects of Departmental decision making.

It is the responsibility of sites and Headquarters offices to ensure that long-term stewardship is considered in each decision that impacts DOE cleanup. This responsibility extends from the identification of remediation alternatives, remedial design, construction, and operation and through all relevant decisions made over the lifetime of the hazards.

3. The Department is a trustee of natural and cultural resources.

Residual hazards should be managed within the larger context of federal land management, which includes trusteeship for ecologically and culturally important areas. The Department will manage these hazards in accordance with applicable regulatory requirements.

4. Long-term stewardship should be incorporated into

relevant Departmental policies, practices, and systems.

Long-term stewardship will be most effective when integrated into existing Departmental processes and management systems. As these DOE policies, practices, and systems (such as Life-Cycle Asset Management, Integrated Safety Management, and Environmental Management Systems) are reviewed and/or implemented, a broad range of long-term stewardship activities and needs may be incorporated. This approach will facilitate the establishment of long-term stewardship as an essential element of all facets of Departmental missions.

5. An intergenerational approach is needed for long-term stewardship.

Long-term stewardship is an enduring commitment by the federal government. Due to the longevity of hazards, the ramifications and costs of current and future decisions and missions will be experienced by generations to come. As these generations' land use practices and local community structures change over time, current assumptions that guide Departmental policy

may require reevaluation and modification.

within their individual regulatory frameworks and communities.

6. Long-term stewardship policy must provide a consistent framework and acknowledge sites' need for flexibility.

Although a consistent framework for long-term stewardship is required for complex-wide management, Headquarters and sites must be responsive to site-specific requirements (local, tribal, state, regional, and federal). Therefore, Departmental long-term stewardship policy must be sufficiently flexible to enable sites to perform necessary long-term stewardship functions

7. The involvement of stakeholders and state, local, and tribal governments is critical to long-term stewardship.

The Department has the responsibility to consult with these affected parties on long-term stewardship issues. Ongoing interaction and exchange increases public awareness. In turn, heightened public awareness facilitates informed decision making and increases the likelihood of successful implementation of long-term stewardship.

Part II. Situational Analysis

Setting the Stage: Current Context

The activities of the Department of Energy and predecessor agencies, particularly during World War II and the Cold War, have left a legacy of radioactive and chemical waste, environmental contamination, contaminated facilities, and hazardous materials at more than 100 sites across the United States. During the past decade, the Department has made significant progress in addressing this environmental legacy and has reduced the risks and costs associated with maintaining safe conditions across the Department's complex.

However, many sites cannot be remediated to levels that would allow for unrestricted use due to technical or economic limitations, worker health and safety challenges, or collateral ecological damage caused by remediation. These sites are, or will be, required to meet regulatory requirements to ensure that engineered and institutional controls employed as part of the remedy remain effective. Given the long-lived nature of radionuclides and other residual hazards, it is reasonable to assume that, at some sites, long-term stewardship will be required

Box 1. Long-Term Stewardship Activities

Long-term stewardship activities at a given site will depend on the nature of residual hazards and other site-specific conditions and may include the following:

- Operating, maintaining, and monitoring engineered controls
- Ensuring the continued effectiveness of institutional controls
- Emergency response
- Compliance oversight
- Management of lands, natural resources, and cultural resources
- Information management
- Supporting, evaluating, and implementing new technologies
- Budget preparation and other administrative support
- Site redevelopment
- Community liaison and planning and stakeholder involvement

for centuries or millennia. A discussion of the scope of long-term stewardship activities is provided in Box 1.

The Report to Congress on Long-Term Stewardship (January 2001) was the Department's first assessment of the scope of long-term stewardship and associated costs through 2006. The report identified long-term stewardship activities at as many as 129 sites, including 34 sites currently managing long-term stewardship. Additional sites beyond those discussed in the report may transfer to the Department for long-term stewardship. For example, the Department is authorized, but not currently

required, to assume long-term stewardship responsibility at several sites under the Nuclear Waste Policy Act. Furthermore, additional sites are periodically added to the Formerly Utilized Site Remedial Action Program. These sites are then eligible for remediation by the U.S. Army Corps of Engineers and may potentially require long-term stewardship by the Department. The Nuclear Regulatory Commission (NRC) may license additional sites that may ultimately transfer to the Department

under the Uranium Mill Tailings Radiation Control Act Title II. Considering these sources and other potential sources of sites the Department may need to conduct long term stewardship at over 200 sites.

In addition, there will be transfers of long-term stewardship responsibilities internal to the Department. For example, current Departmental policy is for the landlord Program Secretarial Office to assume long-term stewardship responsibilities at sites with continuing national security, energy security, and science missions.

The Department's *Final Long-Term Stewardship Study* (October 2001) identified key programmatic challenges facing the Department's long-term stewardship effort. This report provides the underlying information on the complexity of, and the relationship between, long-term stewardship and cleanup activities. In addition, analysis and recommendations developed by the National Research Council, the State and Tribal Government Working Group, the Energy Communities Alliance, site-specific advisory boards, and others have significantly contributed to the Department's understanding of

these issues form multiple perspectives (see Appendix B for a bibliography). Box 2 summarizes these challenges.

A Strategy for Coordinating Long-Term Stewardship Activities to Ensure Timely and Cost-Effective Cleanup

The Department has made significant progress in identifying and undertaking many key long-term stewardship activities. However, because multiple Departmental entities have an interest in, or responsibility for, aspects of long-term stewardship, a coordinated approach is needed.

Box 2. Key Long-Term Stewardship Challenges

- Incorporating long-term stewardship considerations into future site-specific cleanup decisions
- Ensuring continued effectiveness for long periods of time and if property ownership changes
- Developing processes for meaningful public involvement
- Building partnerships with state, local, and tribal governments
- Ensuring long-term public access to information and outreach efforts
- Providing reliable and sufficient funding
- Sustainability, adaptability for societal changes, and advances in science and technologies
- Minimizing the need for eventual long-term stewardship in the planning and operation of new missions and facilities

This plan and the coordination of conducting long-term stewardship activities across programs are necessary to ensure the continued

progress in the cleanup of sites and the protectiveness and cost-effective maintenance of environmental remedies.

In addition, some long-term stewardship management, definitional, and scope issues have yet to be resolved by the Department. This strategic plan provides an outline for an initial path forward to address these issues. The issues and challenges that the plan addresses are outlined below.

Varying Types of Sites, Current and Future Land Ownership, and Long-Term Stewardship Responsibilities

The current scope of long-term stewardship responsibilities is determined by, among other things, the diversity in the types of sites that the Department manages. The potential future scope of the Department's long-term stewardship responsibilities is unclear. The number and types of sites the Department has responsibility for may change through executive, congressional, or regulatory decisions. In addition, federal and state efforts to address the broader national problem of contaminated sites may affect the Department's responsibilities. Although the ultimate scope of these

responsibilities is unclear, the Department will continue to meet its obligation to maintain the remedies at these sites.

The following are examples of types of sites where the Department is currently performing or planning to perform long-term stewardship:

- ***Continuing Departmental Mission Sites***—Approximately 21 sites have continuing ongoing energy, science, or national security missions. The cleanup of these sites will be completed over the next 10 years, and the current (and likely future) landowner is the Department or the federal government generally. The anticipated long-term stewardship activities will be managed by each site “landlord” as part of the day-to-day activities at the site.
- ***Long-Term Cleanup Sites***—Three sites will continue cleanup activities for more than 15 years. For these sites, the land is owned and managed by the Department or other federal land management agency, and the potential future uses vary from continued federal ownership to private industrial use.
- ***Office of Environmental Management Closure Sites***—This category includes the Weldon Spring, Fernald, Mound, and Rocky Flats sites. For these sites, generally, the land is owned and managed by the Department or other federal land management agency, and the future uses vary from continued federal ownership to private industrial use.
- ***Uranium Mining and Mill Tailings Sites***—These former uranium mining and milling sites are remediated by DOE or in some cases by the private licensee and transferred to DOE after remediation. As part of this process, DOE becomes the owner and custodian of the material and responsible for the land management and the remedy surveillance and maintenance.
- ***Formerly Utilized Sites Remedial Action Program Sites***—This category includes the early Atomic Energy Commission activity sites (predominantly privately owned sites that require DOE to conduct record keeping or in some cases remedy maintenance and monitoring).
- ***Nuclear Waste Policy Act Sites***—Section 151(c) of this

statute requires the Department to take ownership of the land and material at certain rare-earth processing sites. Currently, the Department maintains the land and the remedy at one site, but as many as four sites may be eligible for required transfer to the Department.

For purposes of this analysis, it may be helpful to place the Department's activities in the context of the federal government's potential land management and long-term stewardship activities. For example:

- The U.S. Environmental Protection Agency, states, and local governments are grappling with issues related to the cleanup and application of institutional/land-use controls at over 400,000 sites to ensure that underutilized or abandoned property may be reused despite the associated environmental liabilities.
- The Nuclear Regulatory Commission licensing activities could ultimately impact the total number of sites requiring federal long-term land management and remedy monitoring and maintenance.
- The Department of Defense Base Realignment and Closure program has remediated or will remediate and transfer excess military land, including land that may require long-term stewardship, to private redevelopment organizations or local governments for reuse.
- The Department of the Interior coordinates cleanup and conducts long-term stewardship activities at Formerly Used Defense Sites on Bureau of Land Management land.

Currently, the Department is working with these other federal agencies and affected state, local, and tribal governments to develop options for a coordinated approach to land and remedy management issues. These efforts may influence the number of sites, how much land, and the associated remedy maintenance and monitoring the Department will ultimately manage. The potential options range from a scenario where the Department manages the currently identified 21 sites with continuing national security, nuclear energy, or science missions to a scenario where the Department manages the land and long-term stewardship responsibilities at over 200 sites. However, despite these discussions and their impact

on the number of sites the Department will manage, the long-term remedy maintenance for these sites is a federal responsibility. As such, the goal of the Department and the federal government as a whole is to ensure that these land and remedy management responsibilities are conducted in a coordinated, cost-effective, and effective manner.

Within the Department of Energy, Multiple Entities May Be Responsible for Land Management and/or Long-Term Remedy Maintenance and Monitoring

In many cases, current DOE long-term stewardship responsibilities are shared among multiple programs, with multiple levels of Field and Headquarters management. Multiple Headquarters programs may have joint or overlapping responsibility for, or authority for implementing, portions of the long-term stewardship effort. The DOE Office of Environment Safety and Health, for example, is responsible for development and compliance assurance of Departmental orders and guidance regarding the protection of workers, communities, and the environment. The Office of Management, Budget and

Evaluation manages the Department's real property (including property requiring long-term stewardship) and develops and supports the Department's budget requests to Congress. These activities are directly relevant to long-term stewardship requirements and implementation.

At the site level, the long-term stewardship-related activities may be managed by different programs within the Department. For example, at the Los Alamos National Laboratory, the National Nuclear Security Administration manages mission-related activities and performs landlord functions, whereas the Office of Environmental Management conducts cleanup activities. Although current Departmental policy is to transfer the long-term stewardship responsibility to the "landlord" program upon completion of the environmental management cleanup mission, ensuring that remedies remain protective may still involve multiple Departmental elements.

Coordination with Multiple Federal Agencies That Have Land Management and/or Long-Term Remedy Maintenance and Monitoring Responsibilities

At most sites, it is possible to identify and distinguish the land

management and land ownership responsibilities from the environmental remedy maintenance and monitoring responsibilities. In these cases, there may be at least two federal agencies assigned management responsibility for ensuring either the land and natural resource management or the long-term remedy maintenance and monitoring management. For example, at the future Rocky Flats National Wildlife Refuge in Colorado, the management of the land and natural resources at the site will be conducted by the Department of the Interior's Fish and Wildlife Service, whereas the maintenance and monitoring of the environmental remedy will remain with DOE.

The land management responsibilities, including meeting cultural, historical, and natural resource management requirements, should be maintained in a manner that is consistent with or complementary to the environmental remedy in place. Because the land management and remedy management efforts are interrelated and interdependent, a clear articulation and assignment of roles and responsibilities is necessary to ensure the success of both efforts.

New Approaches to the Management of Land Ownership and Long-Term Stewardship Responsibilities Are Evolving

The process of identifying and conducting the necessary long-term stewardship activities is benefited from the involvement of and coordination with other federal, state, local, and tribal government entities. The Department will continue to support the development of management options for long-term stewardship involving these entities. However, because the Department maintains the responsibility and liability for the remedies in place, any potential options must be carefully evaluated for their protectiveness, as well as cost-effectiveness.

Potential management options could include the disposition of the underlying property interest to other federal, tribal, or local governments or private parties while DOE retains the remedy monitoring and maintenance responsibilities at sites. In other cases, and within the applicable legal and regulatory framework, through the development of funding assurances, trust, or other insurance mechanisms, the Department may be able to share

some of the remedy maintenance responsibilities with other parties.

DOE currently partners with local government or private parties in many ways. For example, the Department's Grand Junction Field Office maintains over 30 closed sites requiring long-term surveillance and maintenance (i.e., no more active cleanup mission at the site). Generally, the land management as well as the remedy maintenance and monitoring responsibilities for these sites are the responsibility of the Department. But, in some cases, the Grand Junction Office works with local governments, companies, or private landowners to assist the Department in implementing and monitoring the remedies.

In other cases, the Department may work with local governments and private parties to place land (including land with long-term stewardship requirements) into productive reuse. These arrangements may assist the local economy and tax base as well as encourage multiple parties to maintain an interest in the protectiveness of the remedies, thereby increasing the likelihood of successful long-term stewardship through these types of partnerships.

A Diverse Set of Values Affects Cleanup and Long-Term Stewardship Decisions

The types of sites and land ownership responsibilities for sites requiring long-term stewardship vary greatly among the over 40 sites currently being addressed by the Department's Environmental Management program and the over 200 sites that potentially may be managed by the Department. In many cases the "future use" decision is made by the federal, state, and local entities that conduct, regulate, or have an interest in determining the site end state. These determinations are made within a regulatory process and generally reflect a compromise among multiple sets of values.

Multiple and Sometimes Overlapping Federal, State, and Local Regulatory Authorities and Requirements Impact Long-Term Stewardship Activities

Program activities and cleanup activities are performed under and regulated by different federal, state, and/or local laws and regulations. These different authorities may ultimately require different sets of (potentially interrelated or overlapping) activities at a site after it has entered long-term stewardship.

Typically, the Department conducts cleanup operations and long-term stewardship activities under essentially four different classes of regulatory authorities. The processes and outcomes of these various cleanup and long-term stewardship legal and regulatory frameworks determine, to a large extent, the type and scope of activities required to maintain and protect the remedy. Generally, these categories of authorities and environmental remedy decision processes that define the long-term stewardship requirements include the following:

- The Comprehensive Environmental Response and Liability Act (CERCLA) and regulations
- The Resource Conservation and Recovery Act (RCRA) and regulations
- The Atomic Energy Act (AEA) and regulations
- State environmental laws and regulations

An example of how long-term stewardship requirements differ according to the applicable regulatory framework occurs in the variety of reporting requirements under each of the authorities. Generally, under CERCLA, the minimum requirement is to report to the regulator on the

performance and continued protectiveness of the remedy every five years. Under the AEA and NRC regulation, the Department is required to report on the performance of maintenance and monitoring activities annually. These differing and site-specific requirements must be considered when developing the Department's strategy for conducting long-term stewardship.

In addition to these external sources of oversight and regulation, the Department maintains internal oversight and ensures compliance with applicable laws, regulations, and DOE orders. By building long-term stewardship into the way the Department does business, these existing requirements can be evaluated and implemented in ways that are consistent with and complementary to the required long-term stewardship activities. Furthermore, the Department will continue to work within the framework of federal, state, and local laws and requirements and tribal treaties and obligations. As the Department works to clarify roles and responsibilities internally, it will also work with affected governmental organizations to develop arrangements that provide clarity in both authority and responsibility.

Funding for Long-Term Stewardship Activities

Currently, the annual appropriations process is the relied-upon method for ensuring funding to carry out long-term stewardship activities. Funding for sites in the long-term surveillance and maintenance program is maintained in a separate line item in the Grand Junction Office budget. For continuing mission sites, funding is built (or will be built) into the landlord program budgets. This process has proven adequate to date, and will remain, for the foreseeable future, the predominant method of funding long-term stewardship activities.

However, the Department will continue to investigate and pursue other funding and management options. For example, the Department is working to ensure that, if sites are required to be transferred into Departmental ownership, those transfers occur at no cost to the federal government and the taxpayer. In these cases, ensuring a no-cost transfer may involve the development of, or changes to existing, applications of funding and management tools. As these tools are developed and tested, they may become available for the Department to use for the

management of its current long-term responsibilities at sites.

The Potential Impact of Changing Factors

Successful implementation of long-term stewardship will require the flexibility to react to the inevitable changes that will occur over decades or centuries. Although the Department may be able to anticipate and influence some changes (e.g., that the physical integrity or effectiveness of markers or other physical controls like fences may be reduced over time and therefore need monitoring and replacement), other factors may be outside the control of the Department. Some of these potential factors are outlined below.

- **Physical Properties of Contaminants**—After very long periods of time, the residual radionuclides and hazardous organic chemicals that are contained or monitored as part of the environmental remedy will eventually decay/degrade to levels that are safe for unrestricted use.
- **Regulatory Structures**—Applicable laws, regulations, and standards may change over time, affecting what is considered “safe” and whether remedies in place are considered “protective.”
- **Demographic and Political Changes**—Shifts in populations or values around sites may change exposure pathways and affect the viability of remedial assumptions. For example, over the past 50 years, urban development around some sites has dramatically increased, and ecological

conditions at others have changed significantly. Long-term stewardship strategies that are effective today may no longer be protective in the future. For example, the needs for buffer zones and other restricted use areas at sites are likely to change over time as population patterns in the vicinities of the sites evolve.

- **Climate or Geological Changes**—Climate change, including changes in assumed annual temperature or rainfall, and other geological events, are likely because long-term stewardship may be needed for hundreds or thousands of years. These changes may alter the underlying remedial assumptions.
- **Future Advances in Science and Technology**—Increases in knowledge could reduce long-term stewardship needs and/or

make it possible to clean up existing residual contamination to less-restrictive levels. Advances in robotics, for example, might enable future generations to excavate areas that currently pose unacceptable risks to remediation workers.

- **National Priorities, Cultural, and Economic Changes**—Values and national priorities change over time.

These changes may encourage reevaluations of long-term stewardship strategies in the future. For example, today, the presence of residual contamination generally reduces property values. In the future, limited land availability or concerns over urban sprawl could increase the relative value and uses of property with low levels of residual contamination.

Part III. Mission, Vision, and Goals

Part III of this plan discusses the mission, vision, and goals of the Department's long term stewardship effort. Each of the three goals has performance measures, objectives and strategies that identify both the approach we will take and how we will evaluate our progress.

Mission

To protect human health and the environment from the risks that remain following cleanup.

Vision

Environmental and public health liabilities are reduced, and land is returned to beneficial use consistent with the Department's mission requirements. This long-term stewardship vision will be demonstrated when

- the effects of residual contamination are minimized by effective monitoring and maintenance measures;
- the Department has achieved public trust through cooperative partnerships with stakeholders and state, local, and tribal governments;
- long-term stewardship principles are fully integrated into the Department's planning and operations; and
- the vitality of human, natural, and cultural resources for current and future generations is sustained.

Goals

I. Post-remediation responsibility and liability are effectively managed.

This goal recognizes that the Department is already conducting long-term stewardship at many sites across the nation and focuses on supporting the continued execution of these responsibilities.

II. Long-term stewardship responsibilities are understood and built into the way the Department does business.

This second goal ties the success of the Department's long-term stewardship effort to its ability to improve existing planning and management processes.

III. The capability and tools are in place to ensure the effectiveness of long-term stewardship for current and future generations.

This goal articulates the Department's intergenerational approach to ensuring the continuing protectiveness of

environmental remedies, ensuring the availability of adequate resources, and utilizing developments in information management and advances in science and technology. Understanding of the continuing and iterative

nature of long-term stewardship and the promotion of the Department's partnerships with state, local, and tribal governments and stakeholders is fundamental to the success of this effort.

Goal I. Post-Remediation Responsibility and Liability Are Effectively Managed

The Department currently maintains approximately 30 sites and multiple portions of sites in long-term stewardship. For these sites, the Department is focused on ensuring the continuing protection of human health and the environment, while reducing the need for (and scope of) long-term stewardship liabilities in the future. This liability-reduction effort includes the management of, and responsible and cost-effective monitoring and maintenance for, current environmental remedies. In addition, this goal encompasses the Department's efforts to reduce the need for long-term stewardship in the future by incorporating long-term

stewardship into current remedy decisions.

Consistent with the development of this Long-Term Stewardship Strategic Plan, the Department is developing a framework to support the transition of sites from remediation into long-term stewardship. This site transition framework will be used to support the goal of effectively managing post-remediation responsibility and liability by ensuring the smooth "handoff" of site long-term stewardship responsibilities between entities responsible for undertaking long-term stewardship activities at sites. Affected parties will use the framework as a checklist to ensure that all critical elements are addressed prior to transition. Therefore, the early integration of the framework into site activities and planning ensures that each of the elements can be satisfied upon the completion of cleanup activities and that the remedies in place can remain protective over the long term. Therefore, success in applying the framework to transitions of long-term stewardship responsibility intradepartmentally, and to transfers of sites into or out of Department of Energy responsibility, including privately owned, FUSRAP, and other potential sites, will be a key indicator of progress toward meeting Goal I.

Performance Measures for Goal 1

LTS1: The percentage of periodic reviews completed on time with regulator concurrence or acceptance of "remedy protectiveness" (the goal is 100%).

LTS2: The reduction in costs associated with the Department's long-term environmental liabilities (the goal is TBD).

LTS3: The percentage of Site Transition Framework evaluations completed in accordance with requirements (the goal is 100%).

LTS4: The number of mission-excess acres transferred (the goal is TBD).

Objective 1.1 Ensure that Environmental Remedies at Sites and Portions of Sites Requiring Post-Remediation Surveillance and Maintenance Remain Protective of Human Health and the Environment

Strategies:

- Work effectively to meet current environmental, health, and safety requirements.
- Coordinate the implementation and development of existing and future environment, health, and safety requirements to ensure adequate protection of human health and environment.
- Ensure that the remedy remains protective and that appropriate contingency planning is in place.
- Collect, maintain, and make available appropriate information regarding long-term stewardship information.
- Monitor and evaluate the effectiveness of long-term stewardship strategies and activities.

Objective 1.2 Minimize the Department's Environmental Liability for Long-Term Stewardship Consistent with Laws and Regulations

Strategies:

- Improve and make visible annual and life-cycle cost estimates for long-term stewardship activities.

- Identify and minimize long-term liabilities (e.g., deferred maintenance and environmental, natural resources, and other costs).
- Continuously improve the remedy decision making process by integrating long-term stewardship knowledge.
- Pursue alternative long-term funding, liability, and management mechanisms for long-term stewardship, as appropriate.

Objective 1.3 Accelerate the Cleanup and Transfer of Mission-Excess Land and/or Environmental Remedy Management

Strategies:

- Coordinate the development and implementation of a uniform site transition framework to enable accelerated cleanup and transition long-term stewardship.
- Identify and accelerate the implementation of the Department's current land use planning and land use goals.
- Work effectively with other federal agencies to optimize federal land management options.

- Work with state, local, and tribal governments and private and nonprofit entities (and others) to examine options regarding the transfer and management of land, including land with long-term stewardship responsibilities.

Goal II. Long-Term Stewardship Responsibilities Are Understood and Built into the Way the Department Does Business

The Department recognizes that it has increased long-term stewardship responsibilities resulting from current cleanup efforts. The ongoing Departmental missions and business lines also affect the need for and requirements of long-term stewardship. Considering these interdependencies, it is necessary for the Department to incorporate

long-term stewardship into the way it does business. Goal II details and provides a path forward for achieving an integration of long-term stewardship into the Department's existing planning and management systems, and provides an outline of steps necessary to clarify federal and contractor management roles.

Performance Measures for Goal 2

LTS5: The percentage of sites requiring long-term stewardship plans that have developed and implemented them (the goal is 100%).

LTS6: The percentage of relevant DOE orders and planning and management systems that have incorporated critical long-term stewardship elements (the goal increases from 25% in FY04 to 100% in FY07).

Objective 2.1 Define the Long-Term Stewardship Baseline and Understand and Communicate the Scope of Associated Activities

Strategies:

- Develop an accepted Department-wide definition of and baseline for long-term stewardship.
- Improve the Department's understanding of long-term stewardship, including clarification of requirements.
- Identify and utilize existing Departmental communication, education, and training services to inform DOE and contractor employees about long-term stewardship issues, principles, responsibilities, and new developments.

Objective 2.2 Build Long-Term Stewardship into the Department's Management and Planning Systems and Policies and Orders***Strategies:***

- Coordinate the development of Department of Energy-wide agreement on the scope of long-term stewardship activities, and resolve relevant issues through the Field Management Council or other relevant process.
- Determine and prioritize planning processes and management systems (e.g., Integrated Planning Accountability and Budgeting System, Facility Information Management System, Functions Responsibilities and Authorities Manuals, Project Definition Rating Index, Environmental Management Systems, and Integrated Safety Management Systems) for incorporation of long-term stewardship principles.
- Determine, prioritize, and integrate long-term stewardship into planning processes and systems (e.g., strategic, 10-year, and land use plans).
- Establish a collaborative, streamlined approach to incorporate/advance long-term stewardship.
- Identify, request, and defend resources necessary to execute long-term stewardship responsibilities.

Objective 2.3 Clarify Authority and Accountability for Management of Long-Term Stewardship Activities for the Federal Government, Employees, and Contractors***Strategies:***

- Clarify and implement landlord Program Secretarial Officer (HQ) policy regarding responsibility for long-term stewardship.
- Clarify field organization responsibility for sites in long-term stewardship (e.g., the long-term surveillance and maintenance program).
- Push long-term stewardship principles "down into the ranks" in a manner similar to Integrated Safety Management.
- Ensure that the implementation of effective and efficient long-term stewardship strategies are rewarded.
- Ensure that progress toward meeting critical long-term stewardship requirements is evaluated and improved.

Goal III. The Capability and Tools Are in Place to Ensure the Effectiveness of Long-Term Stewardship for Current and Future Generations

The Department understands the need to address the many institutional issues and challenges facing a multigenerational long-term stewardship effort. Many of these issues cannot be solved, if at all, for years to come. Given this practical reality, the Department's goal is to ensure that we develop the tools and information today that are necessary to prepare future generations to undertake these responsibilities.

To achieve this goal, the Department will work to develop

and maintain the core capabilities necessary to conduct long-term stewardship. These include ensuring that long-term stewardship is supported in annual budget requests and that outreach and education to affected and interested entities inside/outside the Department are provided. The Department will also work to ensure the investment in and utilization of advances in science and technology that can improve sustainability, reduce costs, or increase effectiveness of long-term stewardship.

Performance Measures for Goal III

LTS7: The cost of operating, monitoring, and maintaining remedies through the introduction of new technology (the goal is a TBD reduction in cost).

LTS8: Public evaluations of the accessibility and completeness of long-term stewardship information on the Internet, public reading rooms, or other repositories (the goal is a rating of "excellent" or higher).

Objective 3.1 Achieve Sustainable Management of Sites in Long-Term Stewardship

Strategies:

- Develop sustained capability for public access, retrieval, and comprehension of the long-term stewardship information that is

necessary to ensure the long-term protectiveness of the remedy.

- Develop a Department-wide approach to records management and to the development of additional

necessary long-term
stewardship information.

- Identify, assess, and ensure that DOE capabilities and resources to conduct long-term stewardship are sufficient.
- Understand alternative funding mechanisms that may allow for federal, state, tribal, and local assurance that necessary long-term stewardship activities are or will be maintained.
- Coordinate the management of the Department's natural and cultural resources with long-term stewardship needs.

Objective 3.2 Ensure that a Process Is in Place for Education, Outreach, and Engagement

Strategies:

- Identify roles that various parties (Department of Energy, state, tribal, local government) may play for sustained capability and engage those interested parties.
- Baseline the knowledge and skills required for sustained capability.

- Develop the training for and qualifications of the stewards.
- Develop an effective information management strategy to ensure public accessibility.

Objective 3.3 Effectively Utilize Advances in Science and Technology to Improve Sustainability

Strategies:

- Perform gap analysis to identify long-term stewardship science and technology needs and construct a "roadmap" to address those needs.
- Replace existing long-term stewardship systems with new technologies when cost-effective.
- Improve scientific basis for understanding the impacts on human health and the environment from residual contaminants.

Appendix A. Implementation Actions for the Department of Energy's Long-Term Stewardship Strategic Plan

The Department has compiled a list of actions necessary to achieve the three goals of the Department of Energy Long-Term Stewardship Strategic Plan.

Goal I. Post-Remediation Responsibility and Liability Are Effectively Managed

Objective 1.1 Ensure that Environmental Remedies at Sites and Portions of Sites Requiring Post-Remediation Surveillance and Maintenance Remain Protective of Human Health and the Environment

- Legal and other documents transferring Department of Energy lands to nonfederal owners contain appropriate enforceable use restrictions and right of access clauses beginning in FY02.
- 100% of closure sites' annual preventative maintenance of protective systems is completed on time.
- All applicable environmental, health, and safety requirements are met.
- The Department's long-term stewardship budget remains adequate to protect human health and the environment from residual hazards.
- Core capabilities to monitor and maintain engineered and institutional controls, commensurate with risk, are in place by FY03.
- Measures to be incorporated into site remedial and post-closure decisions are defined by FY03.
- Budget for monitoring engineered and institutional controls for property retained by the Department is commensurate with residual risks by FY03.

Objective 1.2 Minimize the Department's Environmental Liability for Long-Term Stewardship Consistent with Laws and Regulations

- Sites can clearly identify actual (or estimated, as appropriate) cost of long-term stewardship by FY03.
- Long-term stewardship activities and costs are identifiable in Field Office budget requests to Program Secretarial Officers by FY04.

- Long-term stewardship activities and costs are identifiable in Program Secretarial Officers' budget requests forwarded to the Chief Financial Officer by FY04.
- Long-term stewardship activities and costs are identifiable in Department's budget request submitted to Office of Management and Budget by FY04 (and thereafter).
- The vulnerabilities associated with long-term stewardship are quantified in Department's liability report beginning FY02.
- Department's long-term stewardship liabilities are appropriately identified and reported to the Secretary beginning FY05.
- The Department identifies viable alternative funding paths by FY03.
- Negotiations on alternative funding paths are initiated with congressional appropriators by FY04.
- Department, Office of Management and Budget, and Congress legislative options to enable alternative long-term stewardship funding and management options are presented by FY05.

Objective 1.3 Accelerate the Cleanup and Transfer of Mission-Excess Land and/or Environmental Remedy Management

- Site land use plans include measures to reduce Department of Energy footprint, as appropriate, by FY04.
- General Department of Energy-wide criteria for determining best use of Department's land are established by FY04.
- Site land use plans identify the best use for Department of Energy property, using Departmental criteria but accounting for site-specific circumstances, by FY05.
- For 100% of lands with a "Determination of Excess," the Department's land transfer report requirements, notation requirements, and announcements (except quitclaim deed) are met (or drafted) within 18 months of the declaration.
- Long-term stewardship is accounted for in new remedial action closure documents by FY03.
- Maintain a U.S. Environmental Protection Agency, Department of Energy/Defense/Interior interagency regulatory workgroup by FY02.

Goal II. Long-Term Stewardship Responsibilities Are Understood and Built into the Way the Department Does Business

Objective 2.1 Define the Long-Term Stewardship Baseline and Understand and Communicate the Scope of Associated Activities

- Core capabilities are identified in the Department's annual resource allocation planning.
- The Department's natural and cultural resources are inventoried, and at-risk resources are targeted for special protective measures beginning in FY03.
- Long-term stewardship is incorporated into relevant Program Secretarial Officers' program planning guidance by FY03.
- Long-term stewardship is accounted for in new remedial action closure documents by FY03.
- Define measures to be incorporated into Integrated Safety Management/Environmental Management Systems beginning FY05.
- A Field Management Council–approved, Department-wide definition of long-term stewardship (including the scope of activities) by end FY02.
- Appropriate skills training programs are in place by FY05.

Objective 2.2 Build Long-Term Stewardship into the Department's Management and Planning Systems, and Policies and Orders

- Long-term stewardship is accurately captured in the Integrated Planning, Accountability and Budgeting System baseline, and the costs are visible.
- The Office of Management and Budget supports the Department's long-term stewardship budget requests beginning in FY03.
- Natural and cultural resource management and protection are integrated into new remedial and post-closure decisions by FY03.
- Each site has a natural and cultural resource management plan, or has documented and reported to the appropriate Program Secretarial Officer on the lack of a need to have one.
- Natural and cultural resource protection measures are incorporated into site Integrated Safety Management/Environmental Management Systems beginning FY05.
- Appropriate guidance to incorporate long-term stewardship into site Environmental Management Systems/Integrated Safety Management Systems is issued by FY03.

- Appropriate long-term stewardship information is incorporated into data calls for Department of Energy management systems by FY04.
- Long-term stewardship is incorporated into site Environmental Management Systems/Integrated Safety Management Systems by FY05.
- Management systems have capabilities to identify long-term stewardship costs and project long-term stewardship liabilities by FY05.
- The schedule for maintenance of records is modified by FY04.
- The Department's budget explicitly incorporates long-term stewardship activities by FY05.
- Responsibility for long-term stewardship is incorporated into Department of Energy's mission statement by FY03.
- The number of full-time equivalents by job classification needed for long-term stewardship is determined by FY05.
- Strategies for utilizing existing full-time equivalents slots, commensurate with need, are determined by FY06 and thereafter as appropriate.
- Changes to internal Departmental funding processes are agreed to for implementation in the FY06 budget request.
- Appropriate [long-term stewardship] management information systems are defined by FY04.
- 50% of records of contamination, closure, and post-closure plans and monitoring and maintenance plans are managed in an appropriate management information system by FY10.
- 100% of records of contamination, closure, and post-closure plans and monitoring and maintenance plans are managed in an appropriate management information system by FY15.
- Long-term stewardship is accounted for in new Department of Energy National Environmental Policy Act guidance documents by FY03.
- Long-term stewardship is accounted for in new Department of Energy National Environmental Policy Act documents by FY04.
- Relevant chapters of Departmental corporate plans integrate a discussion of long-term stewardship by FY04.
- Long-term stewardship is accounted for in new major project design documents by FY04.
- Long-term stewardship specifically cited in site/institutional 10-year plans.
- Long-term stewardship accounted for in site land-use planning and programs and procedures by FY05.

- Long-term stewardship included in Integrated Safety Management activities and considerations by FY05.
- Department of Energy institutional controls policy is issued by FY02.
- Long-term stewardship is incorporated into Departmental Order 450.1, "General Environmental Protection Program," by FY03.
- Long-term stewardship is incorporated into Integrated Safety Management guidance by FY04.
- Long-term stewardship is incorporated into Life Cycle Asset Management Order by FY03.
- Long-term stewardship is incorporated into other relevant policies/orders by FY05.
- New orders that are relevant contain references to applicable long-term stewardship principles.
- The schedule for maintenance of records is modified by FY04.
- Data necessary to develop the quantitative portion of the annual long-term stewardship report are provided by querying existing national databases.

Objective 2.3 Clarify Authority and Accountability for Management of Long-Term Stewardship Activities for the Federal Government, Employees, and Contractors

- Landlord sites identify long-term stewardship roles and responsibilities for all managers and implement appropriate training beginning in FY03, as appropriate.
- Long-term stewardship roles and responsibilities are communicated to employees (HQ and Field) through appropriate training by end of FY03.
- HQ/Field roles and responsibilities for long-term stewardship budgeting and activity implementation are clearly established and documented by FY03, as appropriate.
- The Department of Energy long-term stewardship training program is developed by FY02.
- Education and training opportunities are provided and attended by appropriate personnel by FY03.
- Program Secretarial Officers' roles and responsibilities for long-term stewardship are identified by FY02.
- The Secretary's performance agreements with Program Secretarial Officers reflect long-term stewardship by FY04.

- Program Secretarial Officers' performance agreements with Field Office Managers reflect long-term stewardship by FY04, for appropriate sites.
- Long-term stewardship roles and responsibilities are incorporated into relevant orders and budget and contracting guidance by FY05.
- Department of Energy contracts contain consistent clauses clearly establishing responsibilities for the planning and implementation of long-term stewardship concepts and activities by FY05.
- Each Operations and Field Office has identified the programs and staff responsible for long-term stewardship planning and implementation in its organization.
- Congressional budget committees recognize and support the importance of long-term stewardship beginning in FY04.

Goal III. The Capability and Tools Are in Place to Ensure the Effectiveness of Long-Term Stewardship for Current and Future Generations

Objective 3.1 Achieve Sustainable Management of Sites in Long-Term Stewardship

- Program oversight and self-assessment by the Field on a continuous basis beginning in FY04.
- Ability to respond to remedy failures is available commensurate with residual risks by FY05.
- The long-term stewardship Web site is moved to, and maintained on, the Department's home page by FY03.
- Closure sites having threatened/endangered species habitats have no irrecoverable declines in associated populations.
- Number of long-term stewardship corrective actions declines annually after FY10.

Objective 3.2 Ensure that a Process Is in Place for Education, Outreach, and Engagement

- Information on residual contamination, its associated risks, and measures in place to protect public health and the environment is available to stakeholders by FY03.
- Remedy review reports are made available to all interested parties.
- A long-term stewardship curriculum for grades K–12 is available to local communities.

- The development of natural and cultural resources management plans are coordinated with long-term stewardship requirements and developed in partnership with stakeholders by FY04.

Objective 3.3 Effectively Utilize Advances in Science and Technology to Improve Sustainability

- Sustainability parameters are defined in completed long-term stewardship science and technology roadmap beginning FY03, and revised as necessary.
- Science and technology budget incorporates long-term stewardship sustainability needs beginning FY04.
- Feedback links between site-specific long-term stewardship technical problems, monitoring and maintenance needs, etc. and overall science and technology program are established beginning FY05.

Appendix B. Long-Term Stewardship References

1. *Closing the Circle on the Splitting of the Atom: The Environmental Legacy of Nuclear Weapons Production in the United States and What the Department of Energy is Doing About It*. U.S. Department of Energy, Office of Environmental Management. DOE/EM-0266. January 1996.
2. *Closure for the Seventh Generation: A Report from the Stewardship Committee of the State and Tribal Government Working Group*. National Conference of State Legislatures. February 1999.
3. *Final Report of the Oak Ridge Reservation End Use Working Group*. Oak Ridge Reservation End Use Working Group. July 1998.
4. *From Cleanup to Stewardship*. U.S. Department of Energy, Office of Environmental Management. DOE/EM-0466. October 1999.
5. *Linking Legacies: Connecting the Cold War Nuclear Weapons Production Processes To Their Environmental Consequences*. U.S. Department of Energy, Office of Environmental Management. DOE/EM-0319. January 1997.
6. *Long-Term Institutional Management of U.S. Department of Energy Legacy Waste Sites*. National Academy of Sciences, National Research Council. 2000.
7. *Long-Term Stewardship of Contaminated Sites: Trust Funds as Mechanisms for Financing and Oversight*. Resources for the Future. Discussion Paper 00-54. December 2000.
8. *Long-Term Stewardship and the Nuclear Weapons Complex: The Challenge Ahead*. Resources for the Future. June 1998.
9. *Long-Term Stewardship Study: Volume I—Report, Volume II—Response to Public Comments*. U.S. Department of Energy, Office of Environmental Management, Office of Long-Term Stewardship. October 2001.
10. *Managing Data For Long-Term Stewardship-Working Draft*. ICF Kaiser Consulting Group. March 1998.
11. *The Oak Ridge Reservation: Stakeholder Report on Stewardship*. Oak Ridge Reservation End Use Working Group. July 1998.
12. *The Oak Ridge Reservation: Stakeholder Report on Stewardship—Volume 2*. Stewardship Working Group. December 1999.
13. *Protecting Public Health at Superfund Sites: Can Institutional Controls Meet the Challenge?* Environmental Law Institute. 2000.
14. *A Report to Congress on Long-Term Stewardship: Volume I—Summary Report, Volume II—Site Summaries*. U.S. Department of Energy, Office of Environmental Management, Office of Long-Term Stewardship. DOE/EM-0563. January 2001.
15. *The Role of Local Governments in Long-Term Stewardship at DOE Facilities*. Environmental Law Institute. 2001.